

Emotion Regulation, Communication, Inhibitory Control and Social Competence

**Intervening Early: Progress and
Opportunities in Child Service Settings**

Mark T. Greenberg

Prevention Research Center, Penn State
University

www.prevention.psu.edu

What I will discuss

- Developmental Model of Integrated Development Across Cognition, Emotion and Behavior
- The Importance of Language and Regulation for Learning and Social Outcomes
- Intervention Trial Findings with the PATHS Curriculum on School Age and Preschool Children

The Big Picture: Public Health Outcomes

Undesired Related
Outcomes

Underlying Shared
Constraints

Poor School
Achievement
Poor Mental Health
Aggression/Violence
Substance Use/Abuse



Impulsive Action
Emotion Dysregulation
Insecure Relations

Resilience Factors that may be Targets of Preventive Interventions

- ❖ Cognitive Abilities
- ❖ Self-Control/Emotion Regulation
- ❖ Relations with peers and adults

Pre Frontal Functions

- **REGULATIVE (Self-Control)**
INHIBIT AND MODULATE ATTENTION
- **EXECUTIVE (Problem Solving)**
PLANNING AND GOAL-SETTING
(Working Memory)
- **SOCIAL (Effective Action in Context)**
INTEGRATION OF EMOTION AND
REASON FOR SOCIAL DECISION-MAKING

On Impulse and Mediation

The first effect of every mediation of an impulse is to check or arrest that impulse. Reflection means postponement; it is delayed action. Through this delay the impulse is brought into connection with other impulses, habits, and experiences. Now that a due balance is kept, the result is that the original impulse is harmonized with the self, and, when expressed, it realizes not only its partial nature but that of the whole self (p.244).

John Dewey, 1894

ABCD Model

(Affective-Behavioral-Cognitive-Developmental)

Stages of Developmental Integration

1. **Infancy:** (Birth to 18 months)

- * Emotion = Communication
- * Arousal & Desire = Behavior

2. **Toddlerhood:** (18 months to 36 months)

- * Language supplements Emotion = Communication
- * Very initial development of emotional labeling
- * Arousal and Desire = Behavior

3. **Preschool Years:** (3 to 6 years)

- * Language develops powerful role
- * Child can recognize/label basic emotions
- * Arousal & desire > symbolic mediation > behavior
- * Development of role-taking abilities
- * Beginning of reflective social planning & problem-solving

Words provide a moment of recognition and delay in which discomfort over feeling might have a chance of being handled in ways other than denial or immediate discharge through action. Words facilitate coping-emotions that are identifiable, known to and shared by others.

Fred Pine (1985)

Self-Regulation Requires

Horizontal Neural Development

- Strong Interconnections between left and right hemispheres - Role of Language

Vertical Neural Control

- Decision-making and motor control in which the Pre-frontal Areas (including ACC, Dorso-lateral Prefrontal and Orbital) that
 - regulate impulse
 - consider context
 - delay and make appropriate decisions
 - control motor response

The parent who labels feelings for the child brings them into the region of social communication--they are shared, the child is not unique and alone with them, they are capable of being understood, the power of words and the psychological achievement words facilitate can be applied to them.

John Dewey (1894)

What is Social and Emotional Learning ?

The process of acquiring the competencies to:

- Recognize and manage emotions
- develop caring and concern for others
- make responsible decisions
- establish and maintain positive relationships
- handle challenging situations effectively

ALL REQUIRE SELF-REFLECTIVE FUNCTIONS

Language/Communication

Inhibition/Self Control

Problem- Solving



PATHS[®]

Promoting Alternative THinking Strategies

VOLUME 3



Carol A. Kusché, Ph.D. • Mark T. Greenberg, Ph.D.

®

The PATHS Curriculum

Five Central Goals

- The conscious awareness of emotional states in oneself and others
- The ability to put these feelings into words
- The ability to calm oneself down when feeling highly emotionally aroused
- The ability to plan ahead and consider the effects of your behavior on others
- Developing greater empathy/compassion for others

Essential Components for PATHS

- Skill Building for Both Students and Teachers
 - Very explicit materials
 - Specific time for skills development
- Provide Sufficient Technical Support to Teachers
 - See other teachers doing it well
 - Coaching
- Generalization: Create Opportunities to Use these Skills Throughout the Day
- Provide Students Feedback and Recognition for Performance
- Integrate into other Academic Subjects
- Involve Parents

Problem-Solving Outline

When you notice upset feelings:

1. STOP and think.
2. Identify the PROBLEM. (collect lots of information)
3. Identify the FEELINGS. (your own and other peoples')
4. Decide on a GOAL.
5. Think of lots of SOLUTIONS.
6. Think about what MIGHT happen next.
7. Choose the BEST solution. (evaluate all the alternatives)
8. Make a PLAN. (think about possible obstacles)
9. TRY your plan.
10. SEE what happens. (evaluate the outcome)
11. TRY another plan or solution if your first one doesn't work.

ER

Learning to Calm Down

The Turtle Story and the 3 Steps for Calming Down



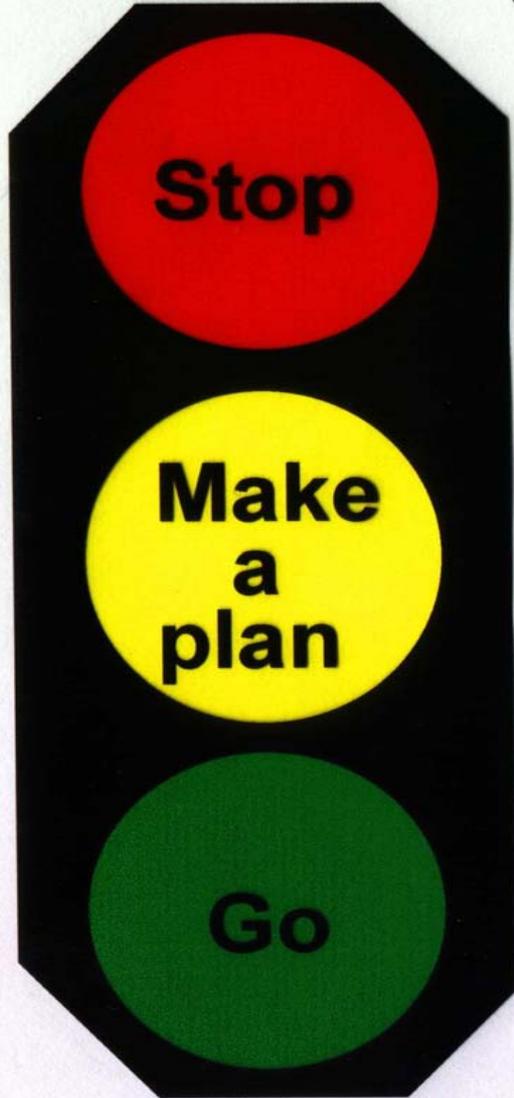
3 Steps for Calming Down

**Tell Yourself
to STOP**

**Take One Long,
Deep Breath**

**Say the Problem
and How You Feel**

Control Signals

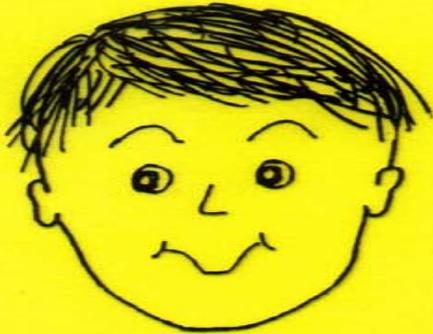


**Take a long, deep breath.
Say the problem and
how you feel.**

**What could I do?
Would it work?**

**Try your best idea.
How did it work?**

EXAMPLE FEELING FACES



**curious or
interested**



kind



excited



ashamed



frustrated



**mad
or angry**

Study Designs

- There have been seven randomized clinical trials with preschool and elementary school-aged children
- Some are quite large (over 6000 children) and others are small (100 children)
- Populations include:
 - Typically Developing Children
 - Children with Learning and Behavioral Disorders
 - Children who are Deaf/Hard of Hearing
 - Both Urban and Rural Populations - Multiple Ethnicities
- Three RCTS done completely independent of myself:
 - Netherlands - Oborio DeCastro (Univ. of Utrecht)
 - Switzerland - Manuel Eisner (Cambridge Univ.)
 - US - Deb Johnson and Hugh Crean (U. of Rochester)

Research Question #1

Can we promote greater social-emotional competence (SEC)?

Grades 1-4

1. Improvements in teacher ratings of frustration tolerance
2. PATHS Classrooms show improvements in peer rated prosociality

PreschoolEC

1. Improvements in teacher ratings of S
2. Improvements in parent ratings of SEC

Research Question #2

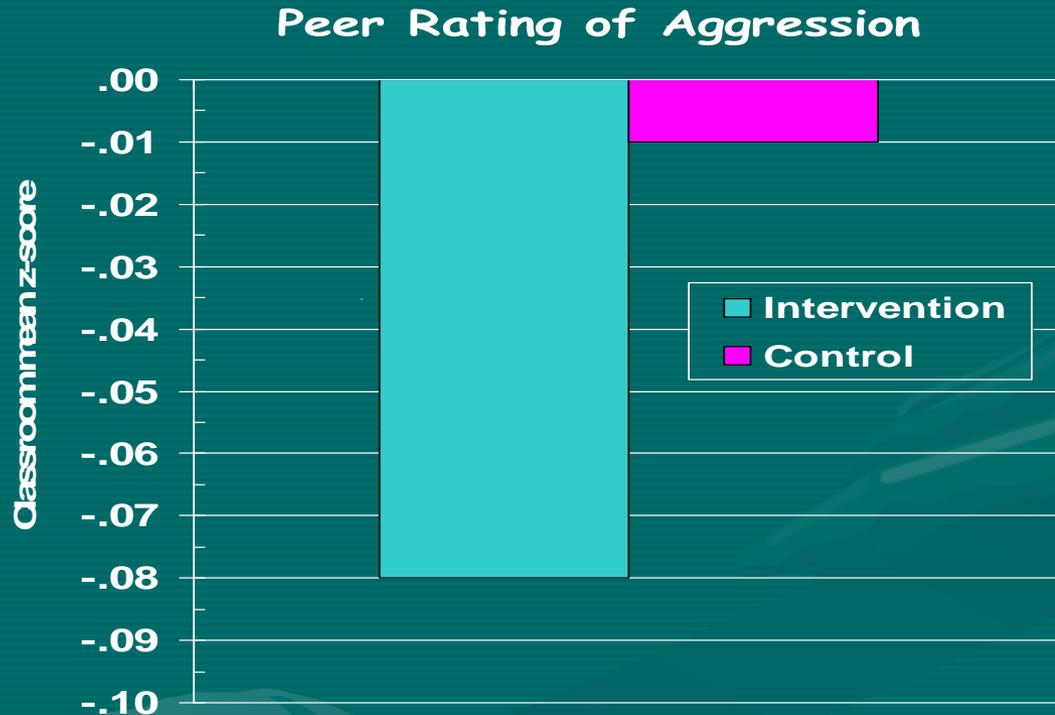
Can we reduce problem behaviors and symptoms of psychopathology?

Grades 2-5

1. Improvements in teacher ratings of externalizing and internalizing problems (CBCL - Achenbach)
2. PATHS Classrooms show improvements in peer rated aggression and hyperactive-disruptive behavior
3. Children report lower rates of depressive symptoms

PATHS Universal Intervention

End of First Grade (1 Year of Intervention)

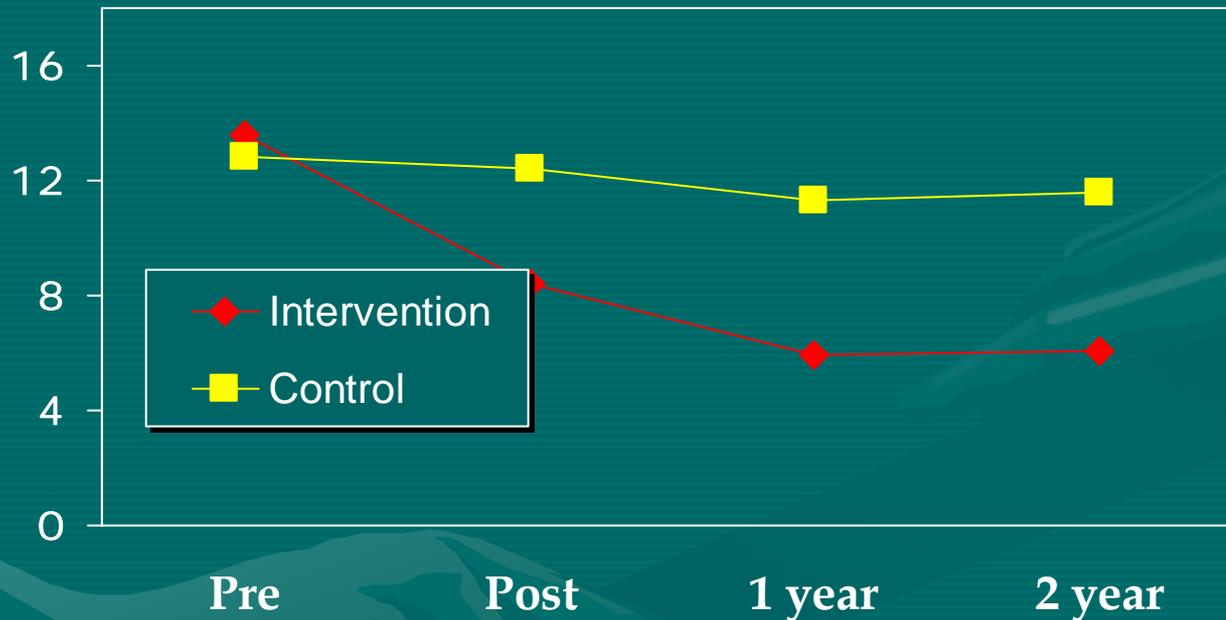


Children who receive PATHS rate their classmates as significantly less aggressive than do children in randomized comparison classes

Fast Track Study - 378 Classrooms - 6715 children
CPPRG, 1999 - Journal of Consulting and Clinical Psychology

PATHS Universal Intervention

1 Year of Intervention
Child Depression Inventory



Students Receiving PATHS in Grade 2 and 3 significantly decline in self-report of symptoms of depression and sadness

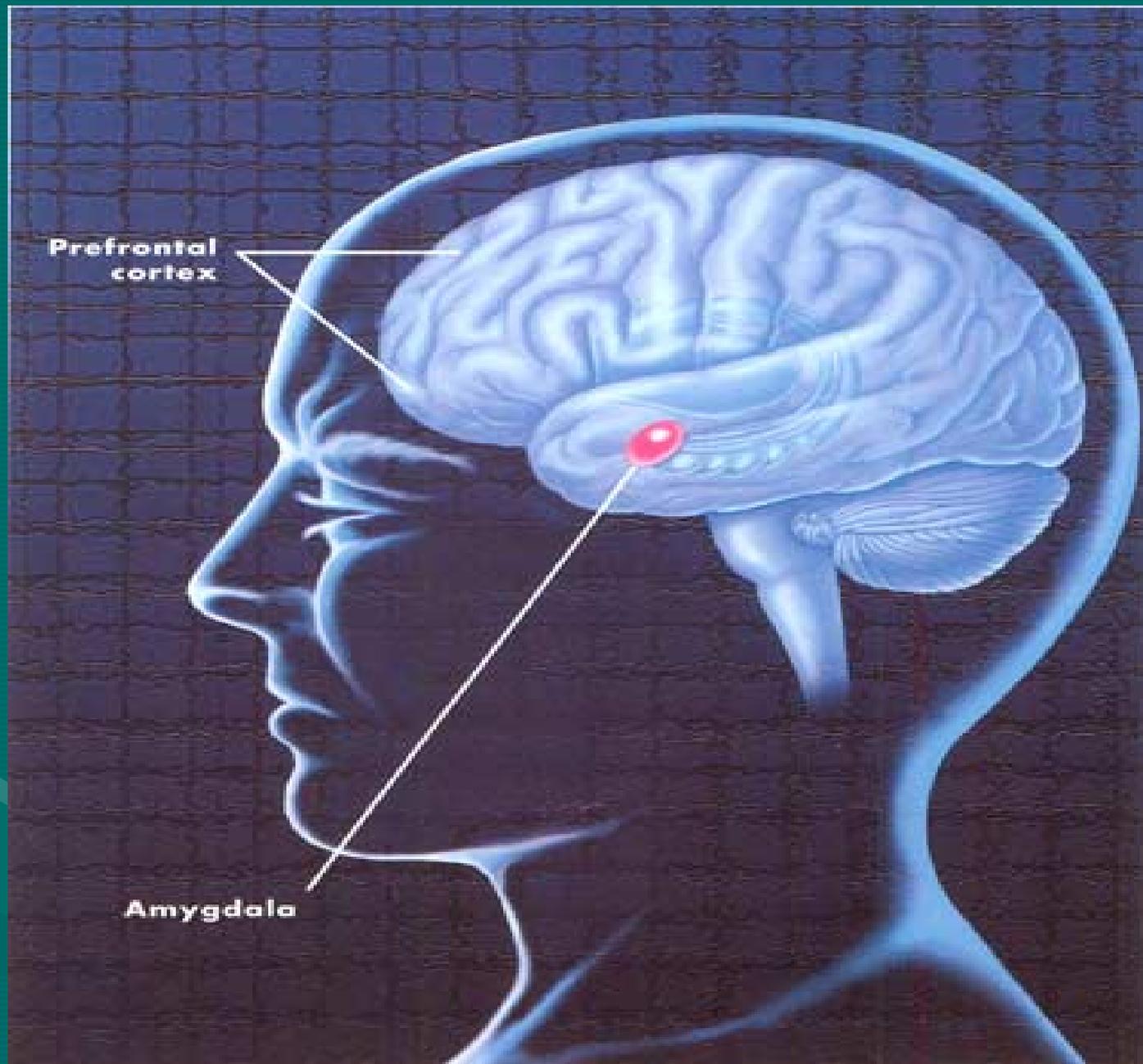
Research Question #3

- Does the Intervention alter Executive Function?

Stroop - (Inhibition)

Verbal Fluency (Working Memory)

- Do changes in Executive Function mediate the relation between intervention and decreased aggression or internalizing problems?



Stroop Test - Part 1

RED

GREEN

BLUE

YELLOW

PINK

ORANGE

BLUE

GREEN

BLUE

WHITE

GREEN

YELLOW

ORANGE

BLUE

WHITE

BROWN

RED

BLUE

YELLOW

GREEN

PINK

YELLOW

GREEN

BLUE

RED

Stroop Test - Part 2 - Inhibitory Control

RED

GREEN

BLUE

YELLOW

PINK

ORANGE

BLUE

GREEN

BLUE

WHITE

GREEN

YELLOW

ORANGE

BLUE

WHITE

BROWN

RED

BLUE

YELLOW

GREEN

PINK

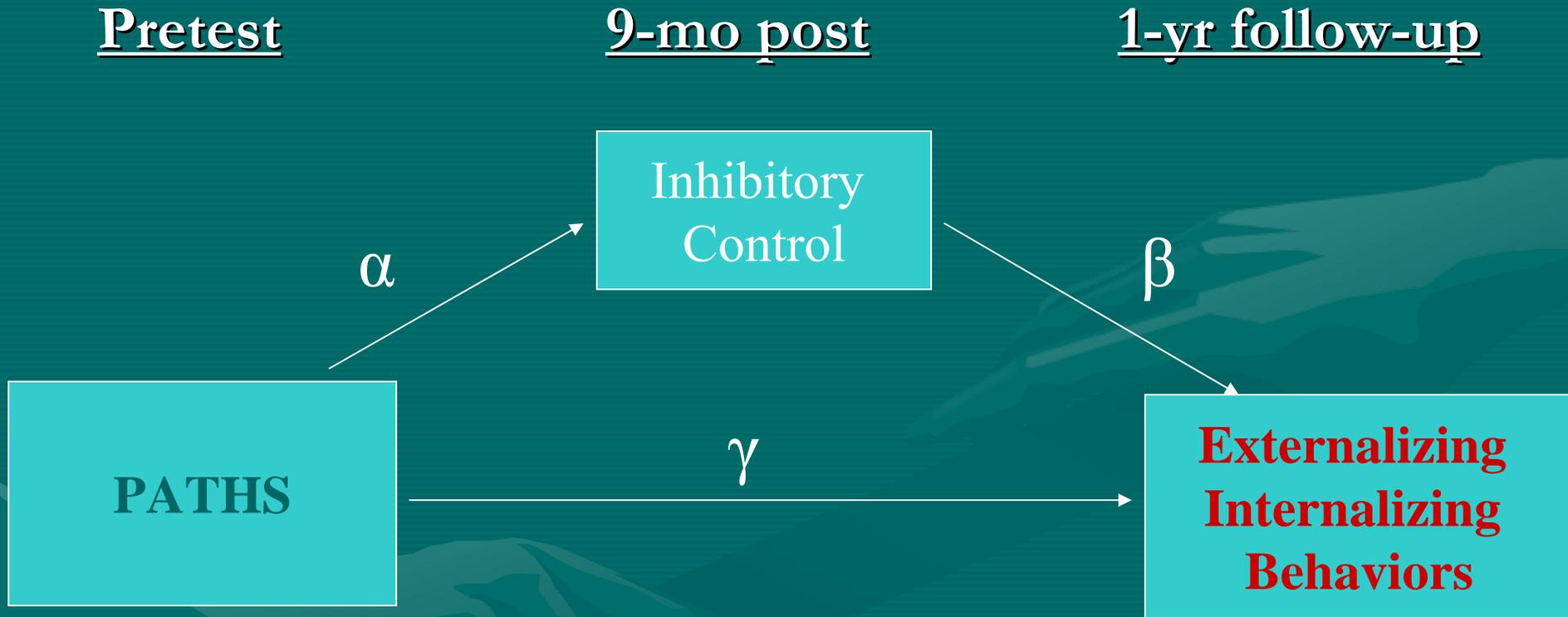
YELLOW

GREEN

BLUE

RED

Hypothesized PATHS Mediation Model



Riggs, et al. (in press)

Participants

- 318 regular education students in the Seattle School District.
- Random assignment of four schools
- Mean age = 8 years (2nd and 3rd grade students).
- 55% White, 33% African-American, & 12% Asian-American, Native American, or "Other."

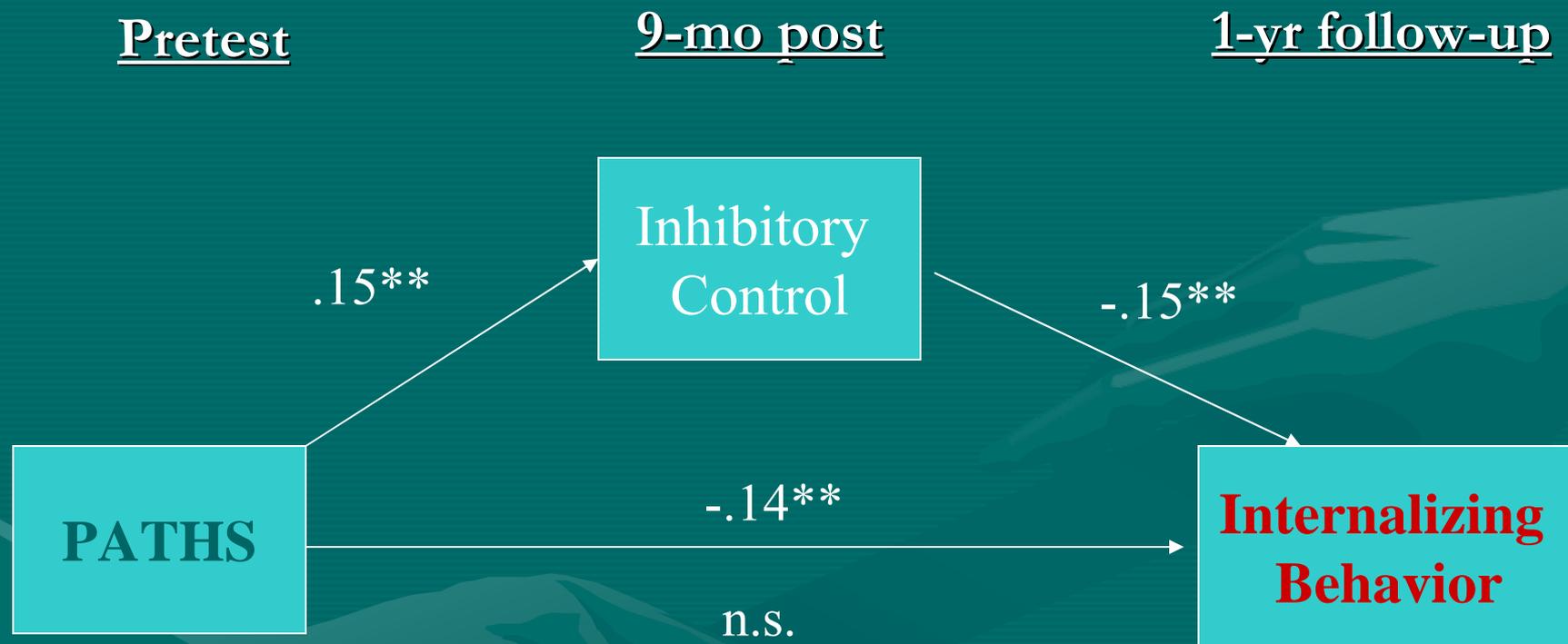
Test of PATHS Mediation Model Externalizing



** = $p < .01$; *** = $p < .001$

Sobel Test for Indirect
Effects $z = 2.06$, $p < .05$

Test of PATHS Mediation Model Internalizing



** = $p < .01$

Sobel Test for Indirect
Effects $z = 2.07, p < .05$

Preschool PATHS: Promoting Social and Emotional Competence in Young Children

Celene E. Domitrovich, Rebecca Cortes,
& Mark T. Greenberg
Penn State Prevention Research Center



How to do Turtle

- 1 **STOP!**
Stop.
- 2 **Breathe.**
- 3 **Say the problem and how you feel.**

What do friends do?

- Friends play.
- Friends help.
- Friends share.

Tamara Feels Worried

The Hidden Toy

Jerry and Bobby

Twiggie Makes Friends

Twiggie Learns to Do Turtle

Twiggie's Special Day

Twiggie and His Friends

Our Feelings Chart

PATHS

Promoting Alternative Thinking Strategies

Preschool

Volume 1
Volume 2

Authors: Calene E. Dombrowski, Ph.D., Mark I. Greenberg, Ph.D., Carol A. Kozaie, Ph.D., & Rebecca Cohen, Ph.D.

PATHS

Promoting Alternative Thinking Strategies

Preschool

Authors: Calene E. Dombrowski, Ph.D., Mark I. Greenberg, Ph.D., Carol A. Kozaie, Ph.D., & Rebecca Cohen, Ph.D.

INSTRUCTOR'S MANUAL



Overview of PATHS Unit Lessons

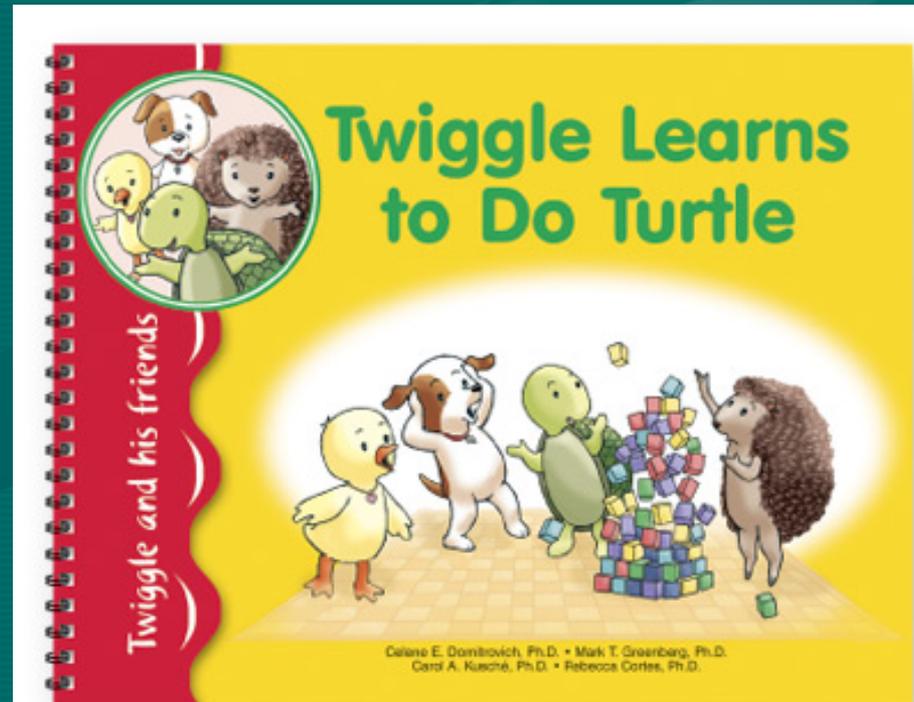
- Creating a Positive Classroom Climate
- Basic Feelings I
- Basic Feelings II
- The Turtle
Technique: Teaching Children Self Control
- Sharing, Caring & Friendship
- Basic Problem Solving
- Intermediate Feelings
- Ending & Transitions

Curriculum Overview – Unit 4

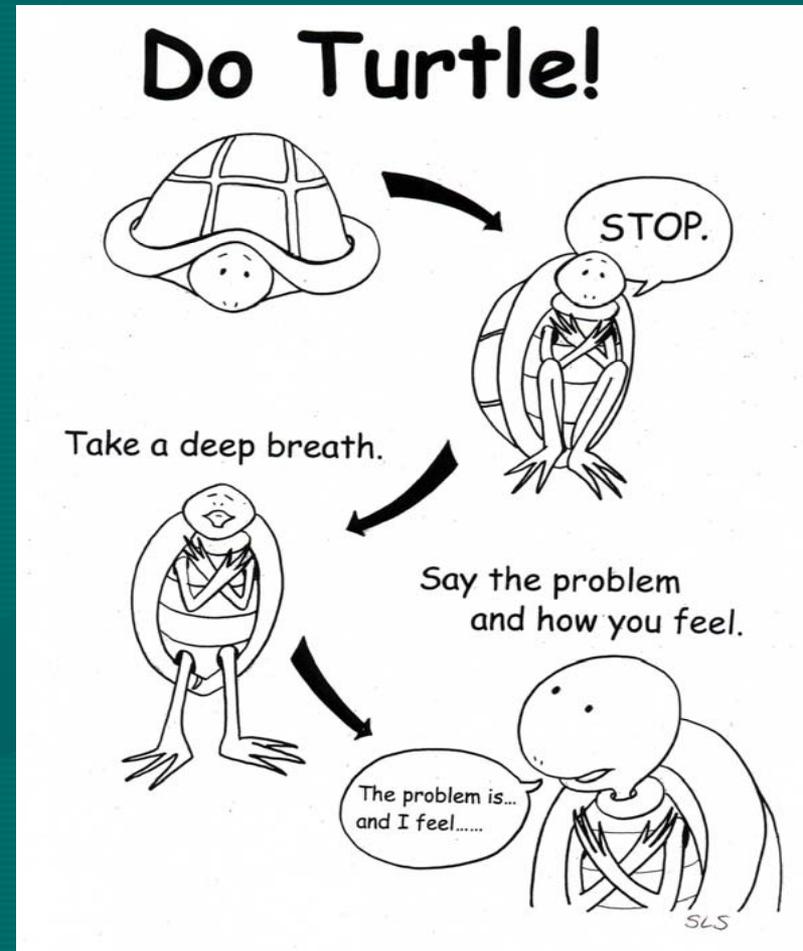
Doing Turtle:

Self Control, Anger Management and Signaling Distress

- ❖ *Twiggle Learns to Do Turtle*
- ❖ Turtle Technique Review
- ❖ Appropriate Turtles
- ❖ Calm or Relaxed

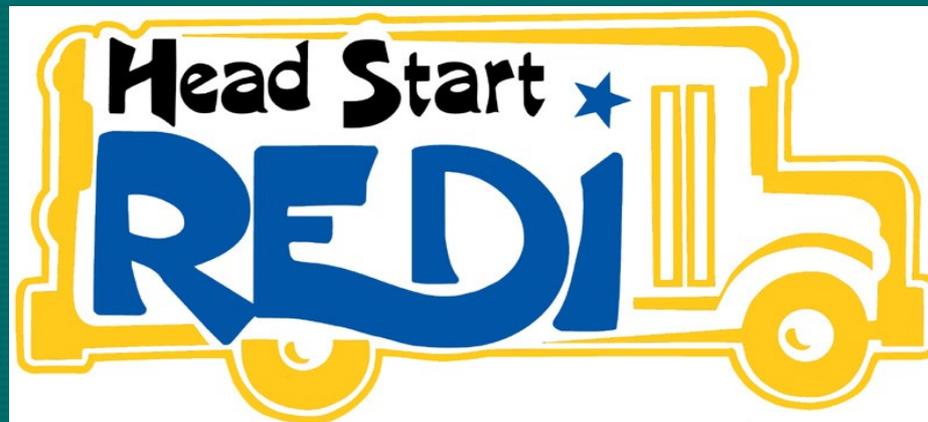


Teaching Self-Control with the Turtle Technique





Promoting Academic and Social-emotional School Readiness: The Head Start REDI Program



**K. Bierman, C. Domitrovich, R. Nix,
S. Gest, J. Welsh, M. Greenberg, C. Blair, K. Nelson, S. Gill**

The Pennsylvania State University

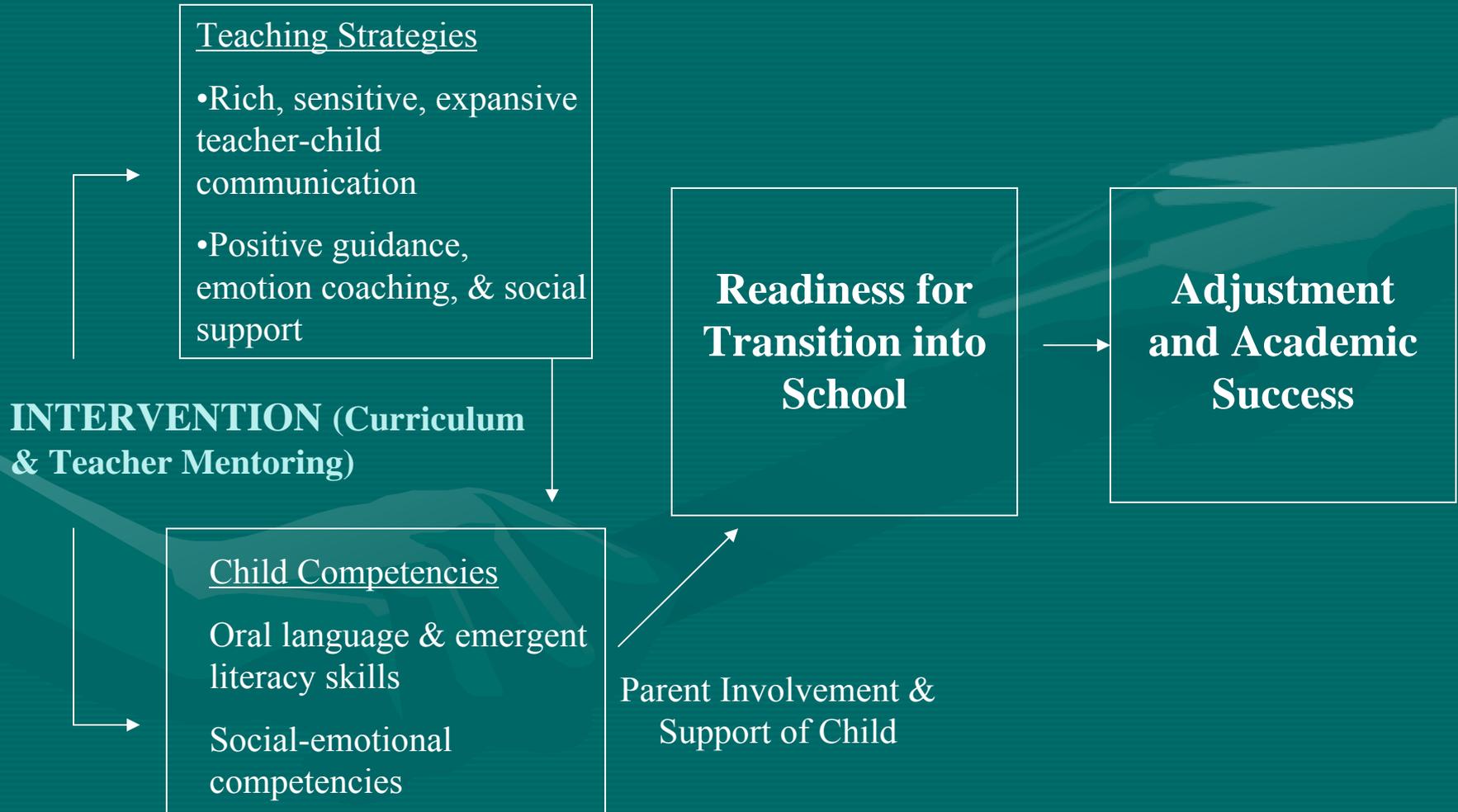
Funded by NICHD grants HD046064 & HD43763

REDI Logic Model

Intervention Targets

Proximal Outcomes

Distal Outcomes



Intervention Components:

Social-Emotional Competencies

PATHS Curriculum

- Prosocial Skills
- Emotional Competence
- Self Control
- Social Problem Solving

Language/Literacy Skills

Interactive Reading

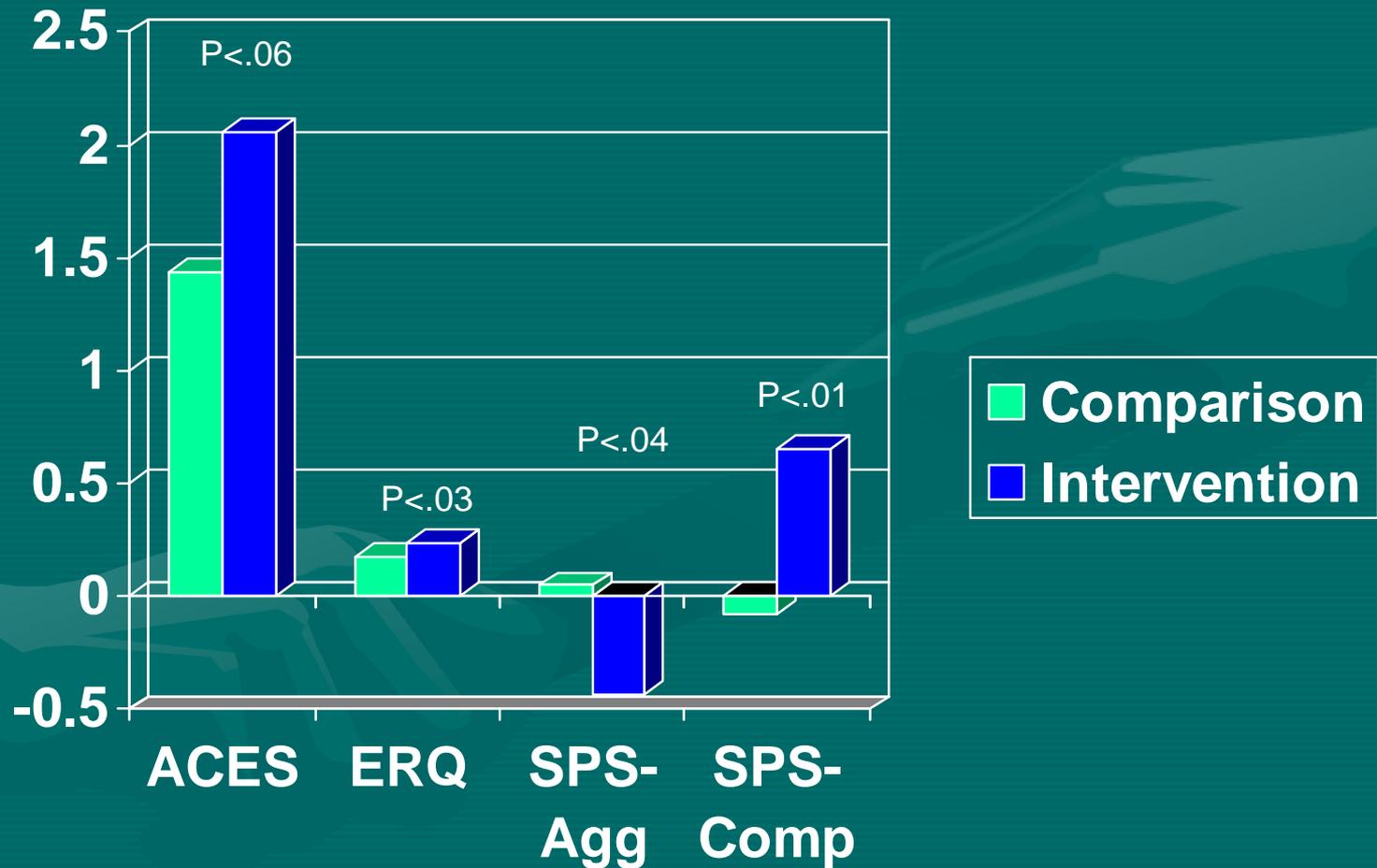
Sound Games

Print Center

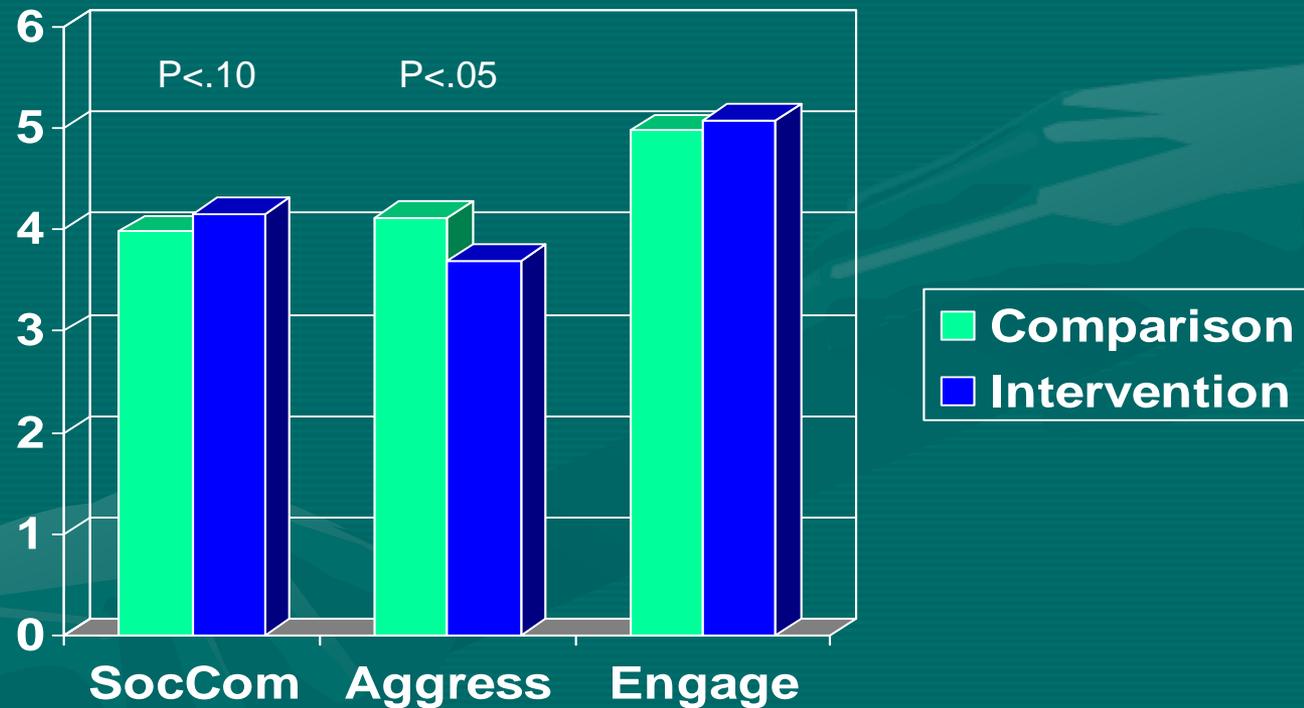
- Vocabulary
- Syntax
- Phonological Sensitivity
- Print Awareness

Major Emphasis on Hands-On, Proactive Teacher Coaching

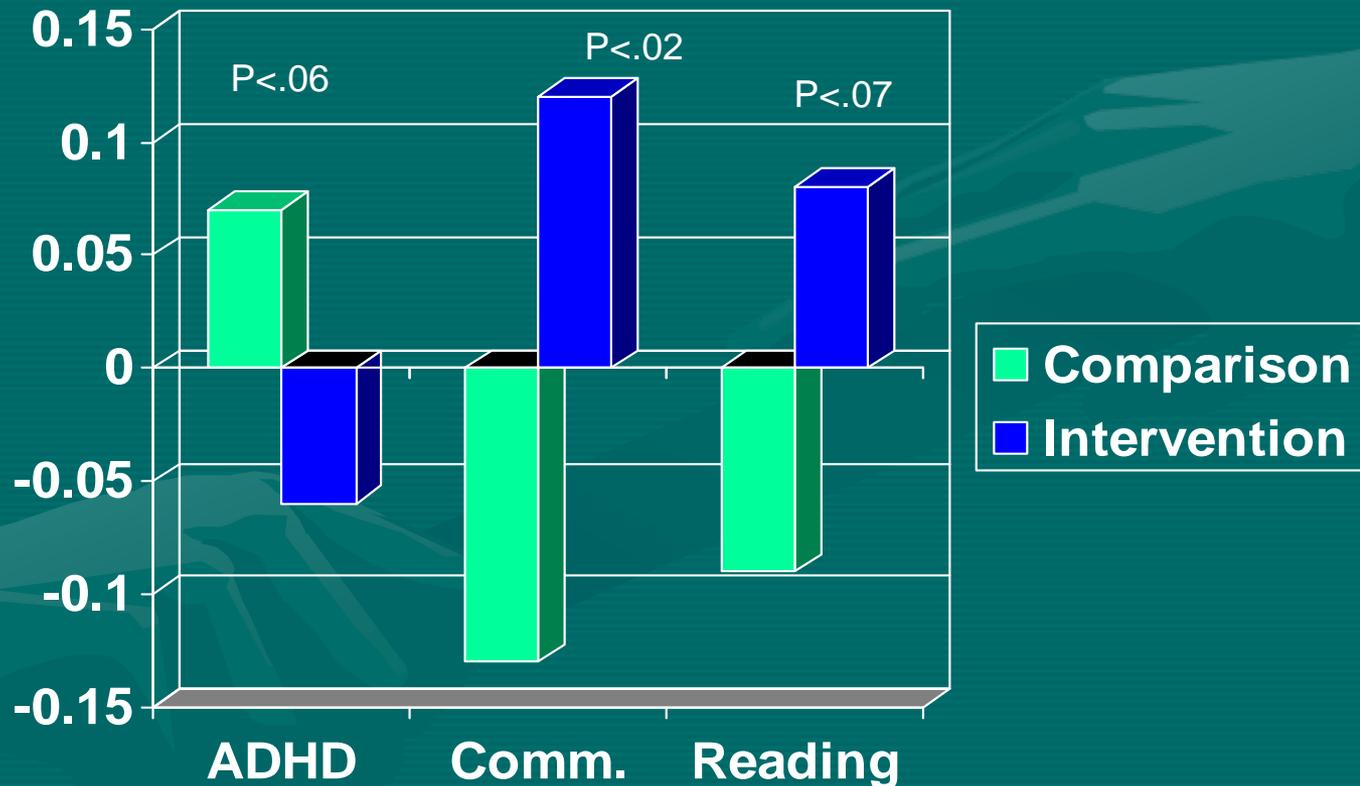
Emotional Understanding and Social Problem-Solving Skills



Teacher Ratings of Social Competence, Aggression, Learning Engagement



Parent Ratings of Attention Problems, Communication, Reading Involvement



Direct Effects on Executive Functions

- Dimension Change Card Sort (WM, Inhib Control, Set Shifting) - Intervention Effect $p=.06$
- Peg-Tapping (Inhibitory Control) - no effect
- Backward Digits (Working Memory) - no effect
- Observed Sustained Task Orientation - $p<.02$

Moderation of Outcomes by EF Skills

- Students with Lower Initial EF Skills showed the most gains in Intervention on Social-Emotional Outcomes
- Students with Higher Initial EF Skills showed the most gains on Literacy Outcomes

Mediational Effects on Executive Functions

- Task Orientation mediates effects on Literacy Outcomes and Teacher Ratings of Social Competence
- DCCS marginally mediates Literacy Outcomes, but not social outcomes

Closing Thoughts

- Universal prevention programs with:
 - strong theoretical models
 - well-trained teachers
 - appropriate dosage (density of lessons and generalization)can substantially:
 - Improve emotion regulation
 - reduce the rate of mental health problems
 - promote positive, healthy development
 - improve cognitive performance
- Improving the "Underlying Shared Constraints" can significantly reduce the public health burden of poor outcomes for children

Thanks

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